

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number
WO 01/23583 A2

(51) International Patent Classification⁷: **C12N 15/55**,
15/54, 15/10, 9/22, 9/12, C12Q 1/68, C12P 19/34

(21) International Application Number: **PCT/EP00/09423**

(22) International Filing Date:
27 September 2000 (27.09.2000)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
99119268.3 28 September 1999 (28.09.1999) EP

(71) Applicant (for all designated States except US): **ROCHE
DIAGNOSTICS GMBH [DE/DE]; 68298 Mannheim
(DE).**

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ANKENBAUER,
Waltraud [DE/DE]; Oberanger 18, 82377 Penzberg (DE).**

**LAUE, Frank [DE/DE]; Bachaecker 11, 82396 Paehl-Fis-
chen (DE). SOBEK, Harald [DE/DE]; Birkenstrasse 29,
82377 Penzberg (DE). GREIF, Michael [DE/DE]; Fleck
28, 83661 Lenggries (DE).**

(74) Common Representative: **ROCHE DIAGNOSTICS
GMBH; Patent Department, 68298 Mannheim (DE).**

(81) Designated States (national): AU, CA, CN, IL, JP, NO,
NZ, RU, SG, US.

(84) Designated States (regional): European patent (AT, BE,
CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC,
NL, PT, SE).

Published:

— Without international search report and to be republished
upon receipt of that report.

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: **THERMOSTABLE ENZYME PROMOTING THE FIDELITY OF THERMOSTABLE DNA POLYMERASES- FOR
IMPROVEMENT OF NUCLEIC ACID SYNTHESIS AND AMPLIFICATION *IN VITRO***

(57) Abstract: A purified thermostable enzyme is derived from the thermophilic archaeobacterium *Archaeoglobus fulgidus*. The enzyme can be native or recombinant, is stable under PCR conditions and exhibits double strand specific exonuclease activity. It is a 3'-5' exonuclease and cleaves to produce 5'-mononucleotides. Thermostable exonucleases are useful in many recombinant DNA techniques, in combination with a thermostable DNA polymerase like *Tag* especially for nucleic acid amplification by the polymerase chain reaction (PCR).

WO 01/23583 A2